

We claim:

1. A method for the treatment of thrombosis in a subject comprising the administration of a CD154 inhibitor in an amount effective to inhibit the release of soluble CD154 (sCD154) from a platelet.

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2. The method of claim 1, wherein the release of soluble CD154 from a platelet is inhibited by at least about a % amount selected from the group consisting of 90%, 80%, 70%, 60%, 50%, 40%, 30%, 20% and 10%.

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3. The method of claim 2, wherein said CD154 inhibitor is a metalloproteinase inhibitor.

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4. The method of claim 3, wherein the metalloproteinase inhibitor is selected from the group consisting of HONHCOCH<sub>2</sub>CH(CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>-CO-NaI-Ala-NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> (TAPI-1), tissue inhibitor of metalloprotease-2 (TIMP-2), doxycycline, galardin, and SB-3CT(MMP2/MMP9 inhibitor VI).

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5. The method of claim 1, wherein the subject is further treated with at least one additional agent which blocks platelet aggregation or which enhances thrombolysis.

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6. The method of claim 5, wherein said at least one additional agent which blocks platelet aggregation is a platelet glycoprotein GP IIb-IIIa antagonist.

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7. The method of claim 6, wherein said GP IIb-IIIa antagonist is eptifibatide.

8. A method for the prevention or treatment of an inflammatory disorder in a subject comprising administering a CD154 inhibitor in an amount effective to inhibit the release of soluble CD154 from a platelet.
- 5     9. The method of claim 8, wherein the subject is a platelet transfusion recipient.
- 10    10. The method of claim 9, further comprising administering to said recipient, platelets which have been treated with a CD154 inhibitor in an amount effective to inhibit the release of soluble CD154 from a platelet, thereby treating or preventing inflammation associated with said platelet transfusion.
- 15    11. The method of claim 9, further comprising enhancing the viability of the platelets following transfusion by treating the platelets with CD154 inhibitor in an amount effective to inhibit the release of soluble CD154 from a platelet.
- 20    12. The method of claim 9, wherein the platelets are treated with said CD154 inhibitor *in vitro* or *ex vivo*, prior to administration to said recipient.
- 25    13. The method of claim 9, wherein the platelets are treated with said CD154 inhibitor *in vivo*, after administration to said recipient.
14. The method of claim 8, wherein the release of soluble CD154 from a platelet is inhibited by at least about a % amount selected from the group consisting of 90%, 80%, 70%, 60%, 50%, 40%, 30%, 20% and 10%.

15. The method of claim 9, wherein said CD154 inhibitor is a metalloproteinase inhibitor.
16. The method of claim 15, wherein the metalloproteinase inhibitor is selected from the group consisting of HONHCOCH<sub>2</sub>CH(CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>-CO-NaI-Ala-NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> (TAPI-1), tissue inhibitor of metalloprotease-2 (TIMP-2), doxycycline, galardin, and SB-3CT(MMP2/MMP9 inhibitor VI).
- 10 17. The method of claim 8, wherein the subject is further treated with at least one additional agent which blocks platelet aggregation or which enhances thrombolysis.
- 15 18. The method of claim 17, wherein said at least one additional agent which blocks platelet aggregation is a platelet glycoprotein GP IIb-IIIa antagonist.
19. The method of claim 18, wherein said GP IIb-IIIa antagonist is eptifibatide.
- 20 20. The method of claim 9, wherein the CD154 inhibitor is administered to said recipient in a manner selected from the group consisting of: prior to platelet transfusion, concurrent with platelet transfusion, subsequent to platelet transfusion, as a therapeutic profile administration which includes quick onset of the effective dose of metalloproteinase inhibitor in combination with a release formulation that permits steady release, and any combination thereof.
- 25 21. The method of claim 20, wherein the therapeutic profile of metalloproteinase inhibitor administration includes quick onset of the

- effective dose in combination with a release formulation that permits steady release.
22. The method of ~~claim 13~~, wherein the metalloproteinase inhibitor is administered to said recipient in a manner selected from the group consisting of: prior to platelet transfusion, concurrent with platelet transfusion, subsequent to platelet transfusion, as a therapeutic profile administration which includes quick onset of the effective dose of metalloproteinase inhibitor in combination with a release formulation that permits steady release, and any combination thereof.
23. The method of ~~claim 22~~, wherein the therapeutic profile of metalloproteinase inhibitor administration includes quick onset of the effective dose in combination with a release formulation that permits steady release.
24. The method of ~~claim 22~~, wherein the metalloproteinase inhibitor is HONHCOCH<sub>2</sub>CH(CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>-CO-NaI-Ala-NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> (TAPI-1) or tissue inhibitor of metalloproteinase-2 (TIMP-2).
25. A method of inhibiting the release of soluble CD154 from a platelet sample, comprising incubating the platelets in a container with an effective amount of a CD154 inhibitor.
26. The method of ~~claim 25~~, wherein said CD154 inhibitor is a metalloproteinase inhibitor.
27. The method of ~~claim 26~~, wherein the metalloproteinase inhibitor is selected from the group consisting of:
- 30 HONHCOCH<sub>2</sub>CH(CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>-CO-NaI-Ala-NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>

- (TAPI-1), tissue inhibitor of metalloprotease-2, doxycycline, galardin, and SB-3CT(MMP2/MMP9 inhibitor VI).
28. The method of ~~claim 25~~, wherein the CD154 inhibitor is added to the container prior to the addition of the platelets.
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29. The method of ~~claim 25~~, wherein the platelets are added to the container prior to the addition of the CD154 inhibitor.
- 10 30. The method of ~~claim 25~~, wherein said incubating the platelets in a container with an effective amount of a CD154 inhibitor is during the storage of said platelets.
- 15 31. The method of ~~claim 25~~, wherein the platelets are treated with an effective amount of CD154 inhibitor after storage but prior to administration to the platelet transfusion recipient.
- 20 32. The method of ~~claim 25~~, wherein the platelet sample is further treated with at least one additional agent which blocks platelet aggregation or which enhances thrombolysis.
- 25 33. The method of ~~claim 32~~, wherein said at least one additional agent which blocks platelet aggregation is a platelet glycoprotein GP IIb-IIIa antagonist.
- 30 34. The method of ~~claim 33~~, wherein said GP IIb-IIIa antagonist is eptifibatide.
35. A container comprising a CD154 inhibitor.
36. The container of ~~claim 35~~ which is a blood collection bag.

37. The container of claim 35 which is a platelet storage container.
38. The container of claim 35, wherein said CD154 inhibitor is a metalloproteinase inhibitor.
39. The container of claim 35 which is a blood collection bag.
40. The container of claim 35 which is a platelet storage container.
41. The container of claim 38, wherein said metalloproteinase inhibitor is selected from the group consisting of :  
HONHCOCH<sub>2</sub>CH(CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>-CO-NaI-Ala-NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>  
(TAPI-1), tissue inhibitor of metalloprotease-2, doxycycline, galardin, and SB-3CT(MMP2/MMP9 inhibitor VI).
42. The container of claim 35, wherein the container further comprises at least one additional agent which blocks platelet aggregation or which enhances thrombolysis.
43. The container of claim 42, wherein said at least one additional agent which blocks platelet aggregation is a platelet glycoprotein GP IIb-IIIa antagonist.
- 25 44. The container of claim 43, wherein said GP IIb-IIIa antagonist is eptifibatide.
45. A container comprising at least one agent which blocks platelet aggregation or which enhances thrombolysis.
- 30 46. The container of claim 45 which is a blood collection bag.

47. The container of claim 45 which is a platelet storage container.

48. The container of claim 45, wherein said at least one agent which  
5 blocks platelet aggregation is a platelet glycoprotein GP IIb-IIIa  
antagonist.

49. The container of claims 48, wherein said GP IIb-IIIa antagonist is  
eptifibatide.

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